

***Commercial Technologies for  
Maintenance Activities (CTMA)***



# **The Commercial Technologies for Maintenance Activities (CTMA) Program**

## **JTEG Meeting: 21 March 2001**

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# Who We Are ...a diverse array of industries



Heavy Equipment

Electronics

Controls



Computers



Machine Tools



Software



Health Care



Aircraft



Bearings



**Hamilton Standard**

A United Technologies Company



Aerospace

Automotive



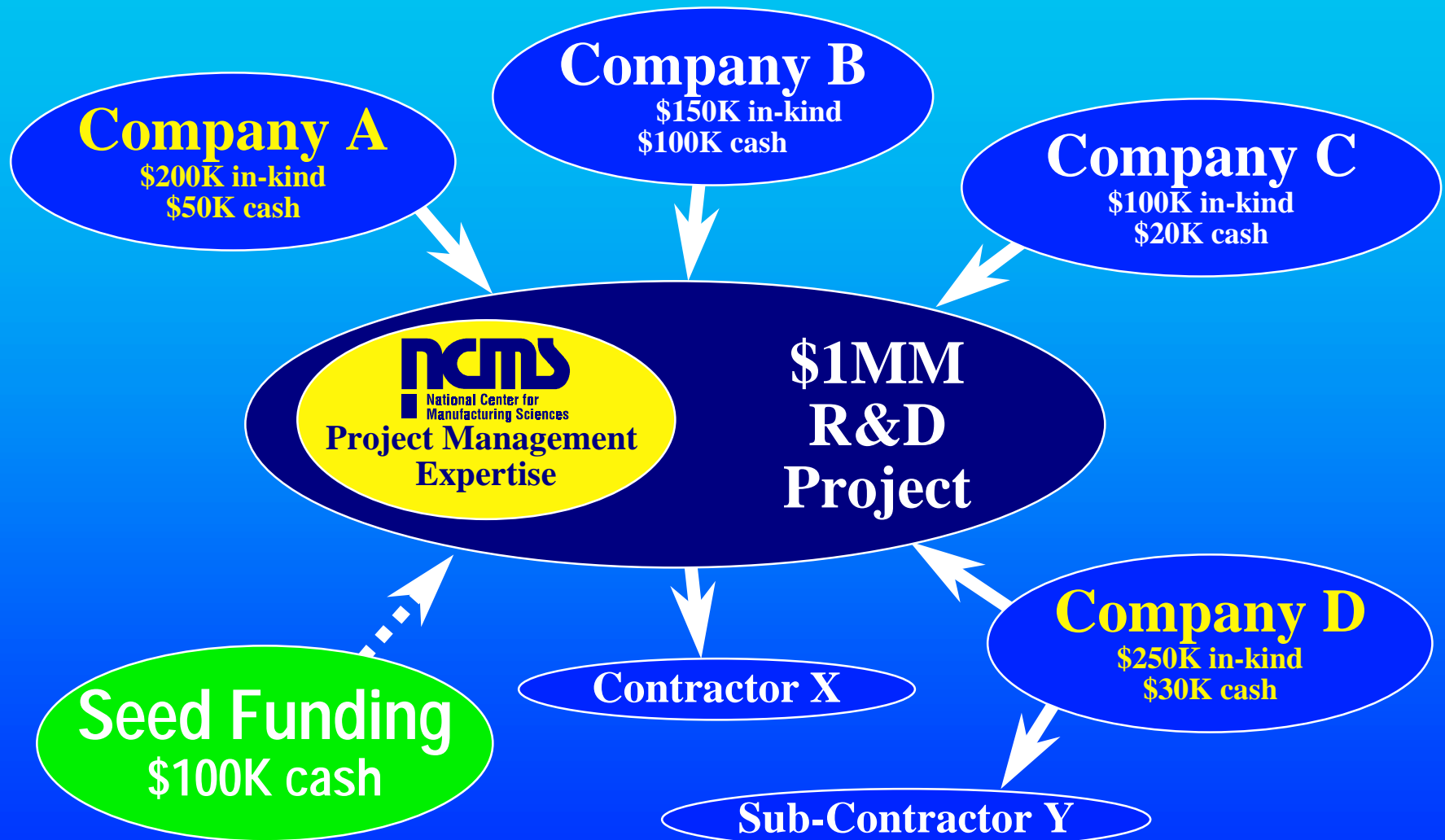
Sensors



Communications



# What We Do: A Typical NCMS Project



# CTMA Program Mission

- Identify, form, launch and deploy new projects coupling the needs and strengths of commercial industry with the DoD maintenance and repair facilities.
- Focus on reducing overall costs.

# CTMA Program Overview

- Cooperative Agreement between NCMS and the Office of the Secretary of Defense
- Administered by Office of Maintenance Programs, Resources and Planning
- Multi-year Funding Agreement
  - \$5 Million (1998)
  - \$6 Million (1999)
  - \$8 Million (2000)
  - \$6 Million (2001)

# CTMA Cooperative Agreement Highlights

- Funding for Direct Contract support to develop and demonstrate technologies
- Focus on cost reduction within DoD Organic Maintenance Activities (Depot Level)
- Requires a \$2 to \$1 Industry cost share on all technology development funding
- Provides for property disposition, IPR protection, and collaborative umbrella for all participants

# CTMA Program Scorecard

- 23 Projects Approved by Office of the Secretary of Defense
  - ADUSD (L) is Program Administrator
- \$13.5 Million in Direct Contract Costs
- Over \$28.6 Million in Industry Cost Share Commitments
- 18 DoD Depot Level Maintenance Activities
- 75 Commercial Industrial Organizations

# Who Participates (DoD facilities)

- *Tobyhanna AD*
- *Corpus Christi AD*
- *Red River AD*
- *Anniston AD*
- *Norfolk NSY*
- *Portsmouth NSY*
- *Pearl Harbor NSY*
- *Puget Sound NSY*
- *MC3 Albany*
- *MC3 Barstow*
- *Davis-Monthan*
- *Aviation Classification Repair Depots*
  - Groton, CT; Springfield, MO
- *Pope AFB, NC*
- *Langley AFB, VA*
- *NADEP North Island*
- *NADEP Jacksonville*
- *NADEP Cherry Point*
- *OC-ALC*
- *Ogden ALC*
- *WR-ALC*
- *Trident Kings Bay*
- *Camp Pendleton*
- *Philadelphia Foundry*
- *Navy Spawar*
- *DMEA*
- *Ft. Hood, TX*
- *Fort Rucker, AL*
- *Aviation/Ship Interm. Maint. Fac.*
  - Norfolk; San Diego

# Ongoing CTMA Projects

- Leak Test Technology Development
- Recent Alternatives to Chromate Processes
- Process Substitution for Composite Repairs
- Portable Thermal Spray Technologies
- Laser Shot Peening for Life Cycle Increase
- Embedded Decoupled Capacitors
- Electronic Collaborative Manufacturing
- Next Generation Inspection Systems

# Ongoing CTMA Projects

- Maintenance Mentoring System
- Affordable High Density Chip on Board
- Interactive Visualization
- Near Dry Machining of Aluminum
- Laser Engineered Net Shaping
- Rapid Prototyping Technology Advancement
- High Throughput Production Processing
- Rapid Response Computer Aided Mfg.

# CTMA Project Launch Criteria

- Begins with a concept (~5 pages long)
- Joint Industry/DoD interest and needs
- Cost/Benefits summary sketched out
  - ROI
- Participant roles defined
- Support within Depot for care and custody of program deliverables
- Submission of concept to OSD
- 10 day turnaround for approval...

# Elements of the Concept Paper

- Concept Paper: Title
- Statement of Problem
- Proposed Solution
- Deliverables (A final report is not sufficient. Projects should deliver a product or service to the repair facility.)
- Benefits
  - What quantifiable benefits are to be expected from this project. (we need to generate an ROI for the project)
  - What performance measurements are going to be undertaken during the project
- Anticipated Participants (DoD, Industry Partners, other government or academic facilities)
- Estimated Cost and Duration
  - Total Cost Estimate:
  - Cost Sharing Estimates include: All projects require a 2:1 industry cost-share component, which can include materials, equipment usage, staff hours, travel, background technology being given to the project, testing, and most any effort that is used to achieve the project goals.
  - Requested Contract Funding:

# New Emerging Ideas from JTEG

- Improved Performance of Honeycomb Bonded Structures (NAVAIR)
- Aircraft Wiring Diagnostics and Integrity (NAVAIR)
- Enhancing Examination and Inspection Processes (GTRI)
- Intelligent Near Net-shape Manufacturing Cell (WR-ALC)
- Enhanced Plasma Nitriding for Reduced Gas Turbine Engine Maintenance and Repair Costs (EMT, Inc.)
- Advanced/Alternative Noise Cleansing Development (OO-ALC)
- Depot-based Laser Ultrasonic (UT) Inspection for Rapid Non-destructive Inspection (NDI) of Composite Components (OO-ALC)
- Composite Panel Construction Techniques (OO-ALC)
- Robotic Coil Winding (OO-ALC)
- Legacy Avionics Systems ATE and Process Replacement Study (OO-ALC)
- Retrograde Part Identification Using 2<sup>nd</sup> Generation Permanent Marking Techniques (NAVAIR)

# Next Steps

- Promote Project Ideas
  - CTMA Connector Newsletter
- Identify possible project team members
- Prepare Concept Paper
- Present at Annual Maintenance Activities Symposium, Hilton Head, 8 May (by project champion)

# CTMA Symposium 2001, 8 May, Hilton Head

- 8:30 AM: Registration and Continental Breakfast
- 9:00 AM: Welcome and Introductions
- 9:15 AM: CTMA Project Showcase
  - Rapid Prototyping
  - Laser Engineered Net Shaping
  - Interactive Visualization
  - Maintenance Mentoring System
  - Advanced Leak Testing
  - High Throughput Machining of 5-axis Aluminum Parts
- 11:00 AM: Depot Needs
  - Army, Navy, Air Force, Marines
- 12:00 PM: Lunch (speaker from DoD)
- 1:30 PM: Workshops
  - Laser Shot Peening
  - Solid Freeform Fabrication
  - Telemaintenance
  - New Project Ideas
- 3:45 PM: Symposium Synopsis and Closing

# Getting Involved and Staying Informed

- Project Ideas
  - Submit directly to NCMS Staff
  - Respond via website or e-mail  
(<http://ctma.ncms.org>)
- CTMA Website
- The CTMA Connector Newsletter
- Annual Maintenance Activities Symposium